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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/743,387   | 12/23/2003  | Masahiko Matsukawa   | 21581-00314-US      | 7938             |
| 30678 7590 06/26/2008<br>CONNOLLY BOVE LODGE & HUTZ LLP<br>1875 EYE STREET, N.W.<br>SUITE 1100<br>WASHINGTON, DC 20036 |             |                      |                     |                  |
| EXAMINER   |             |                      |                     |                  |
| ZHENG, LOIS L  |             |                      |                     |                  |
| ART UNIT   |             | PAPER NUMBER         |                     |                  |
| 1793   |             |                      |                     |                  |
| MAIL DATE  |             | DELIVERY MODE        |                     |                  |
| 06/26/2008   |             | PAPER                |                     |                  |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/743,387

**Applicant(s)**

MATSUKAWA ET AL.

**Examiner**

LOIS ZHENG

**Art Unit**

1793

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 April 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 29-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-48 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)  
Paper No(s)/Mail Date 4/24/08 5/12/08
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 24 April 2008 has been entered.

### ***Status of Claims***

2. Claims 1-28 are canceled in view of applicant's amendment filed 24 April 2008. New claims 29-48 are added. Therefore, claims 29-48 are currently under examination.

### ***Status of Previous Rejections***

3. All previous rejection grounds are withdrawn in view of applicant's claim amendments filed 24 April 2008.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 29 and 31-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto et al. US 2002/0175082 A1(Sakamoto), and further in view of Nagashima et al. US 6,180,177 B1(Nagashima).

Sakamoto teaches a process of treating a metal surface, wherein the metal surface is first treated to form a conversion coating, then further treated by cationic electrodeposition (abstract, paragraph [0018]). Sakamoto further teaches that the conversion coating film can be any non-chromium film such as a phosphate or zirconium oxide film (paragraphs [0020-0021]). In addition, Sakamoto does not explicitly teach drying the conversion coating before cation deposition step and the cation electrodeposition is taking place in wet condition as well (Example 1).

However, Sakamoto does not teach that the conversion coating solution comprises the claimed components.

Nagashima teaches a non-chromium metal surface treatment process utilizing an aqueous coating solution comprising (a) fluoro-acid of titanium, zirconium, and/or hafnium, (b) amino silane coupling agent such as N-(aminoethyl) 3-aminopropyltrimethoxysilane, and (c) metal ions such as magnesium, zinc and aluminum (abstract, col. 4 line 51—col. 5 line 39). Nagashima's coating solution does not require the presence of phosphate ions.

Regarding claims 29, 31, 34 and 44-47, it would have been obvious to one of ordinary skill in the art to have incorporated the conversion coating solution of Nagashima into the conversion coating step in the process of Sakamoto in order to produce a protective coating film with improved corrosion resistance, fingerprint resistance, blackening resistance and adhesion as taught by Nagashima (col. 2 lines 34-43). In addition, even though Sakamoto in view of Nagashima do not explicitly teach the claimed washing with conversion coating solution treated metal surface with ionic

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water, one of ordinary skill in the art would have found it obvious to wash the conversion coated metal surface with ionic water prior to cationic electrodeposition in order to remove excess coating solution and residuals on the conversion coated metal surface.

Regarding claims 32-33, even though Sakamoto in view of Nagashima do not explicitly teach the claimed amount of aminosilane compound, one of ordinary skill in the art would have found it obvious to have adjusted the concentration of aminosilane in the conversion coating solution of Sakamoto in view of Nagashima via routine optimization in order to achieve desired coating properties.

Regarding claims 35-39, Nagashima further teaches that the concentration of the fluoro-acid is preferably from 0.1-15wt%(col. 5 lines 15-18), which implies a Zr/Ti/Hf concentration that overlaps the claimed Zr/Ti/Hf concentration. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed Zr/Ti/Hf concentration range from the disclosed range of Sakamoto in view of Nagashima would have been obvious to one skilled in the art since Sakamoto in view of Nagashima teaches the same utilities in its' disclosed Zr/Ti/Hf concentration range.

Regarding claims 40-43, Nagashima further teaches that the pH of its coating solution ranges from 2.0 to 6.5, which reads on the claimed pH.

Regarding claim 48, Sakamoto further teaches that its process is suitable for aluminum or aluminum alloy.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakamoto in view of Nagashima, and further in view of Shimakura et al. US 2004/0009300 A1(Shimakura).

The teachings of Sakamoto in view of Nagashima are discussed in paragraph 5 above. However, Sakamoto in view of Nagashima do not explicitly teach the claimed addition of accelerators.

Shimakura also teaches a treatment process for a metal surface using a coating solution comprising fluoroacid of Zr/Ti(paragraph [0033] and aminosilane[0038]. Shimakura further teaches adding accelerators such as peroxide, or hydroxylamine to the coating solution in order to accelerate the reactive coating process(paragraph [0069]). Shimakura further teaches that peroxide can be present in an amount of 1-50g/l(paragraph [0142]).

Regarding claim 30, it would have been obvious to one of ordinary skill in the art to have incorporated the accelerators such as peroxide or hydroxylamine as taught by Shimakura into the conversion coating solution of Sakamoto in view of Nagashima in order to promote the coating speed as taught by Shimakura. In addition, the concentration of accelerator such as peroxide as taught by Sakamoto in view of Nagashima and Shimakura overlapped the claimed accelerator amount. Therefore, a prima facie case of obviousness exists. See MPEP 2144.05. The selection of claimed accelerator concentration range from the disclosed range of Sakamoto in view of Nagashima and Shimakura would have been obvious to one skilled in the art since Sakamoto in view of Nagashima and Shimakura teach the same utilities in their disclosed accelerator concentration range.

#### ***Double Patenting***

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the

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unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 29, 32-43 and 47-48 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 7,250,193 B2. Although the conflicting claims are not identical, they are not patentably distinct from each other because U.S. Patent No. 7,250,193 B2 teaches a metal surface treatment process that is significantly similar to the claimed cation electrodeposition process.

### ***Response to Arguments***

9. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Affinito US 6,203,854 B1(Affinito) teaches a conversion coating solution comprising fluoro-zirconic, fluorotitanic or fluorohafnic acids and aminosilane such as aminopropyltrimethoxysilane. The pH of the coating solution is no greater than 6 and a paint layer can be subsequently applied.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LOIS ZHENG whose telephone number is (571)272-1248. The examiner can normally be reached on 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/  
Supervisory Patent Examiner, Art  
Unit 1793

LLZ